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ABSTRACT

This paper reports the results of a study conducted to determine whether a congruence between student and instructor of dogmatic personality styles, as measured by a 50-item closed-ended questionnaire that included a short-form version of Rokeach's Dogmatism Scale, affected the student's level of achievement. Subjects were five instructors and their 227 students at El Paso Community College (Texas). Among the findings of the study were: (1) the study sample was highly representative of the total college population; (2) the short-form Rokeach D Scale proved to be sound; (3) the overall personalities of the college's students reflected broad variations in their dogmatic component; (4) the findings regarding dogmatism and selected study variables supported the literature in direction but not in intensity; and (5) the congruence of dogmatic personality styles between student and instructor does have an appreciable and positive effect upon the student's level of achievement. Conclusions may suggest matching psychologically compatible students and instructors; however, constantly changing populations prevent efficacy of such action. Instead, judicious use of D Scale scores can allow instructors to individualize instruction in an informed manner. An extensive bibliography is included and the study instrument and related material are appended. (Author/JDS)

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STUDENT-FACULTY PERSONALITY STYLES AND THEIR IMPACT UPON STUDENT ACHIEVEMENT

by

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A PRACTICUM PRESENTED TO NOVA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

The primary purpose of this study was to determine whether or not a congruence of dogmatic personality styles between student and instructor affected that student's level of achievement to any significant degree. It was hypothesized that it would, that a congruence of personality styles would enhance that student's level of achievement. A secondary purpose was to confirm or deny the validity of certain prior research findings regarding dogmatism and the five variables of income, education, military experience, religious catholicism, and race/ethnicity.

A 50-item, closed-ended questionnaire was developed that included a short-form version of Rokeach's D Scale. This questionnaire was administered to five instructors who agreed to participate, as well as to their students, and D Scale scores were ascribed to each. These participants were then classified as High Dogmatics or Low Dogmatics, depending upon whether their individual score was higher or lower than the median score for the total population. Student personality styles were then compared with that of their instructor, and classified as either Matched or Unmatched. The achievement level of students thus classified (the final grade achieved for the course) was then analyzed using the chi square statistic.

Conclusions of this study included the following: (1) the sample population used in this study was highly representative of the

College's total population; (2) the short-form D Scale used in this study proved to be a sound measuring device; (3) the overall personalities of the College's students reflected broad variations in their dogmatic component, ranging from very high to very low; (4) the findings regarding dogmatism and income, education, religious catholicism, and race/ethnicity supported the literature in direction only, not in intensity; (5) the findings regarding dogmatism and military experience were invalidated due to irresolvable data collection problems; and (6) the congruence of dogmatic personality styles between student and instructor does have an appreciable and positive effect upon the student's level of achievement for the course.

It was recommended that: (1) the D Scale be administered to students on the first day of class, and the results utilized in determining learning strategies for individual students in the class; (2) additional research be conducted to further clarify the relationship between dogmatism and learning; and (3) that a workshop presenting these and related findings be developed for use in community college faculty development programs.

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Chapter 1

INTRODUCTION

Since its inception in 1971, El Paso Community College has maintained as one of its institutional goals the concept of individualized instruction. While this may be noted by scanning the College's Mission Statement, it is quite clearly perceived when assessing the content of its faculty development program. Thus, all new instructors are provided with such books as Herrscher's (1971) Implementing Individualized Instruction and Johnson and Johnson's (1970) Developing Individualized Instructional Material; noted individuals in the field (Herrscher and others) have been brought in as consultants during faculty development days; and special presentations on such topics as the implementation of individualized instruction in specific fields of instruction (auto mechanics, psychology, etc.) have been conducted -- all for the edification of the instructional staff (Haddad, 1975).

Yet, while El Paso Community College has maintained individualized instruction as one of its major institutional goals, and while it has strongly encouraged its instructional staff to develop and implement individualized instructional materials, little has been done as yet to determine the effects of such techniques upon learning outcomes, of either the total population, or of particular discriminant subpopulations. Therefore, the questions of when and how to implement such instructional strategies, as well as with whom, remain unanswered questions.

While numerous definitions of individualized instruction permeate educational literature, most tend to include the following characteristics:

1. it is field-independent, allowing the learner to proceed by him- or herself through a course of instruction, and to work at times most convenient to that individual;

2. it is self-paced, allowing the learner to proceed through the content materials at a rate that is most comfortable to that individual;

3. it is student-centered, by seeking to remedy diagnosed deficiencies in that individual's skills or knowledges, as well as by initiating instruction in a given subject area at a point appropriate to that individual's prior level of understanding and achievement;

4. it is student-controlled, with the instructor furnishing the learner with a wealth of instructional media from which to select those most conducive to that individual in successfully mastering clearly established terminal performance objectives (Johnson, et al., 1972:470-71).

From these defining characteristics it is clear that the role of instructors utilizing individualized instructional methods will of necessity shift from that of the traditional group leader and dispenser of knowledge, to that of diagnostician of student educational maladies, curriculum developer, and prescripter/manager of the learner's educational activities.

It is also clear from the above that the individualized instructional methodology seeks to deal with the individual student as a separate and unique entity, rather than as an insignificant member of a group. As this is so, it has become necessary to isolate and analyze the myriad factors that contribute to the enhancement of an individual's learning experience. Personality, it has been suggested, is one of those factors (Christie and Cook, 1958; Hoffer, 1958; Jones, 1956; Kirscht and Dillehay, 1967; Restle, Andrews and Rokeach, 1964; Smith, Bruner and

White, 1956; Titus and Hollander, 1957; Vacchiano, Strauss and Hochmann, 1969).

In determining the effects of personality upon student learning, many educational researchers have utilized with a high degree of success Rokeach's (1956, 1960) concept of the "dogmatic" personality style (Erlich and Lee, 1969; Vacchiano, Strauss and Hochmann, 1969). This has been defined as an individual evincing "(a) a relatively closed cognitive organization of beliefs and disbeliefs about reality, (b) organized around a central set of beliefs about absolute authority which, in turn, (c) provides a framework for patterns of intolerance and qualified tolerance toward others (Rokeach, 1954:195)."

Of primary significance to this research endeavor is the effect of the dogmatic personality style upon the learning process. A central proposition of Rokeach's theory is that the closed-minded cognitive system of dogmatic persons is highly resistant to change (Rokeach, 1954, 1960; Erlich and Lee, 1969). While this proposition has generally been upheld by empirical research (Adams and Vidulich, 1962; Christensen, 1963; Costin, 1965, 1968; Erlich, 1961a, 1961b; Frumkin, 1961; Restle, et al., 1964), Erlich and Lee (1969) point out that five intervening variables must be considered in predicting the interaction between the dogmatic personality style and learning: (1) the authority-source of the new beliefs; (2) the syndrome relevance of their mode of communication; (3) the belief congruence of new ideas; (4) the novelty of the new ideas; and (5) the centrality of the new ideas to the individual (p. 258).

This research study has endeavored to investigate the interplay of student personality styles with that of their instructor, the typical "authority-source" of the new beliefs, and one of Erlich and Lee's (1969)

intervening variables. It has sought to determine the impact of the congruence between student and instructor personality styles upon the student's mastery of learning.

The major purposes of this research study have been:

1. to identify student dogmatic personality types at El Paso Community College;

2. to identify faculty dogmatic personality types at El Paso Community College; and

3. to determine the impact of the congruence of personality styles between the student and the instructor as it relates to student achievement.

A secondary purpose of this research study has been to confirm the validity of certain prior research findings noted in the survey of the literature relevant to dogmatism and learning.

The method of investigation employed in this study has been of the experimental type. A closed-ended questionnaire was developed and administered to selected faculty members and to students enrolled in their classes. These responses were then subjected to various statistical analyses with the assistance of the IBM/360 computer housed at the New Mexico State University Computer Center. Validation of the hypotheses was through the use of contingency tables and the Chi Square statistic.

Chapter 2

BACKGROUND AND SIGNIFICANCE

The concept of "dogmatism" as measured by the D Scale was developed by Rokeach to serve as a generalized theory of authoritarianism (Fruchter, Rokeach and Novak, 1958; Rokeach, 1956, 1960; Rokeach and Fruchter, 1956). This is in marked contrast to the ideologically right-oriented (fascistic) authoritarianism that had heretofore been determined by the California F Scale (Adorno, et al., 1950).

This chapter will explore Rokeach's theory of dogmatism and how it relates to learning under the headings of (1) Rokeach's theory explained, (2) review of the literature, and (3) conclusion.

Rokeach's Theory Explained

It is Rokeach's theory that all of a person's belief may be organized into two interdependent parts: a belief system and a disbelief system. The belief system is defined by him as "all the beliefs, sets, expectancies, or hypotheses, conscious and unconscious, that a person at a given time accepts as true of the world he lives in (Rokeach, 1960:33)," while the disbelief system is "composed of a series of subsystems rather than merely a single one, and contains all the disbeliefs, sets, expectancies, conscious and unconscious, that, to one degree or another, a person at a given time rejects as false (Rokeach, 1960:33)." It will be noted from the above definitions that the total system for Rokeach is asymmetrical rather than symmetrical, including on

the one hand a set of beliefs that one accepts, and on the other hand, a number of sets that one rejects.

Rokeach further postulates that all of a person's beliefs may be organized along a central-peripheral dimension. Thus, according to him:

> "(1) A central region represents what will be called the person's 'primitive' beliefs. These refer to all the beliefs a person has acquired about the nature of the physical world he lives in, the nature of the 'self' and of the 'generalized other'. (2) An intermediate region represents the beliefs a person has in and about the nature of authority and the people who line up with authority, on whom he depends to help him form a picture of the world he lives in. (3) A peripheral region represents the beliefs derived from authority, such beliefs filling in the details of his world map (Rokeach, 1960:39-40)."

Rokeach's position is that it is the structural interconnections among central, intermediate, and peripheral beliefs that gives the total belief-disbelief system its integrated, holistic character.

A third dimension of a person's belief system is the time dimension. This refers to the person's beliefs about the past, present, and future and the manner in which they are related to each other. Rokeach conceives a broad perspective as one in which "the person's past, present, and future are all represented within the belief-disbelief system," and the narrow perspective as one in which "the person overemphasizes or fixates on the past, or the present, or the future without appreciating the continuity and the connection that exist among them (Rokeach, 1960: 51)."

Finally, the total structure of a belief-disbelief system is described by Rokeach as varying along a continuum from open to closed. The basic characteristic that defines the extent to which a person's system is open or closed is the extent to which the person can receive,

evaluate, and act upon relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside (Rokeach, 1960: 54). Thus, for Rokeach, a cognitive organization is considered to be closed with respect to the organization of the belief-disbelief continuum (dimension one) to the extent that there is a "high magnitude of rejection of all disbelief subsystems, an isolation of beliefs, a high discrepancy in degree of differentiation between belief and disbelief systems, and little differentiation within the disbelief system (Rokeach, 1960:61)." It is closed with respect to the central-peripheral dimension (dimension two) to the extent that the world is seen as threatening, that there is a high degree of the belief in absolute authority, that there is a high incidence of evaluating persons according to the authorities they line up with, and that there is a high proportion of peripheral beliefs being related to each other by virtue of their common origin in authority (Rokeach, 1960:62). It is closed, finally, with respect to the time-perspective dimension (dimension three) to the extent that there is "a narrow, future-oriented time perspective, rather than a more balanced conception of past, present, and immediate future in relation to each other (Rokeach, 1960:63)."

To validate the above theory, Rokeach constructed the Dogmatism Scale. This instrument has been published in five different formats, but most research has utilized Form D, produced in 1956 and consisting of 66 items, or Form E, produced in 1960 and consisting of 40 items. Reliability figures for the use of Form D was reported to be .91, and .68 to .93 for that of Form E, using different population bases (Rokeach, 1960:75).

Review of the Literature

Plant (1960) substantiated Rokeach's contention that the D Scale is a better measure of general authoritarianism than the F Scale, using a large sample of American students (N = 2350). More recently, Hanson (1968) also demonstrated that the D Scale successfully taps general authoritarianism, whereas the F Scale isolates only ideologically right-oriented authoritarianism. Further, in a factor analysis of items of the D and F Scales, Kerlinger and Rokeach (1966) reported a high correlation between the two scales (from .54 to .77), as well as the fact that a "common core" of authoritarianism underlay both scales. A second-order factor analysis, however, demonstrated that the two scales were factorially discriminable, with the D Scale representing a generalized authoritarianism independent of a particular ideological content.

That a common core of authoritarianism exists between the D and F Scale strongly suggests that the same correlations should hold for both scales relevant to various demographic factors. Thus, we should predict, based upon prior research, a significant, inverse relationship between income and D Scale scores, as was found for F Scale scores (MacKinnon and Centers, 1956a; McDill, 1961; Roberts and Rokeach, 1956; Srole, 1956). So also should there exist a significant, inverse relationship between D Scale scores and education (MacKinnon and Centers, 1956a; McDill, 1961; Roberts and Rokeach, 1956; Srole, 1956), as well as military experience (Roghmann and Sodeur, 1970). A significant, direct relationship should exist between D Scale scores and religious catholicism (Gregory, 1957; Warshay, Goldman, and Biddle, 1964), and ethnicity (Smith and Prothro, 1957). These correlations suggested by prior

research underline the intrinsic value of having conducted this research study at El Paso Community College, as the institution's student population is uniquely dominated by significantly large numbers of Spanish-surnamed students, military and veteran students, Catholic students, and lower-economic students (Cardenas, 1975).

The research dealing with the effects of the dogmatic personality style upon belief acquisition and learning generally support Rokeach's theory. Erlich's (1961a) first published report compared the performance of 57 subjects from an original universe of 100 students enrolled in introductory sociology on precourse (t_1) and postcourse (t_2) tests of sociology separated by ten weeks, and on a mail follow-up five to six months later (t_3). D Scale scores of the subjects were significantly, negatively related to test performance at all three time periods. Erlich concluded: "subjects low in dogmatism entered the sociology classroom with a higher level of learning, learned more as a result of classroom exposure, and retained this information to a significnatly greater degree than the more dogmatic subjects (1961a:149)."

Five years later, Erlich (1961b) contacted 90 of the original subjects by mail and received 65 completed returns, yielding dogmatism scores, sociology test scores and subjects' reports of their final grade-point averages. The same results were obtained as in the preceding study.

In a replication of Erlich's procedures, using 67 psychology students, Costin (1965) achieved no significant correlation between dogmatic personality style and classroom performance. Costin concluded by suggesting two hypotheses: that there was more than one kind of closed-mindedness, and/or that the content of learning was the crucial

variable in the differences between the two studies.

Three further studies reiterated the contradictory findings. Christensen (1963), in a partial replication without controls, reported no significant correlation between dogmatic personality style and two postcourse measurings of performance in an introductory psychology classroom. Frumkin (1961), however, using an introductory sociology class of 135 students, found that low D Scale scorers had significantly higher grades. Zagona and Zurchner (1965), using an extreme scorers design similar to Frumkin's, indicated that the 30 highest and 30 lowest D Scale scorers (N = 517 introductory psychology students) had significantly different scores on their mid-term examination -- with low scoring subjects performing at a higher level of learning.

White and Alter (1967) administered the D Scale to 2,099 students in 14 introductory psychology classes involving seven different instructors. Six of the 14 correlations between dogmatic personality style and examination grades were significant at the .05 level, and the mean Pearsonian r was -.18 (p .01). Attempts were made to reconcile the contradictory findings by exploring the effects of examination format upon the dogmatism/learning correlations. This explanation, however, was not confirmed.

Further confirmation for Rokeach's theory was presented by Costin (1968), and Rokeach and Norrell (1966). The number of positive results are beyond chance, yet the on-again, off-again nature of the findings strongly indicates the presence of uncontrolled, intervening variables.

While examination format has been disconfirmed as an intervening variable (White and Alter, 1967), course content (Erlich, 1961b) and

teaching strategies (Hudspeth, 1966; Torcivia and Laughlin, 1968; Zagovna and Kelly, 1966) have not been. Nor has the significance of the authority-source of the content (Powell, 1962; Erlich and Lee, 1969).

In summary, this literature review has sought to establish the following points: (1) that while the D and F Scales are highly correlated, they are also factorially discriminable; (2) that the D Scale is a more valid instrument than the F Scale in measuring generalized authoritarianism independent of a particular ideological content; (3) that statistical correlations between various demographic variables and authoritarianism demonstrate the significance of having conducted the present study at El Paso Community College, given the unique composition of its student body population; (4) that statistical correlations between D Scale scores and learning have generally been mixed, pointing to the existence of hitherto uncontrolled intervening variables; and (5) that the authority-source of the learning content as an intervening variable was a significant question to investigate, and as such required statistical confirmation.

Conclusion

This practicum has sought to determine whether or not the personality style of the authority-source of the new material for the student (the instructor) has an appreciable effect upon learning. Since Rokeach's theory of dogmatism suggests that a closed-minded individual would have difficulty in separating the message from the authority-source, it was posited that the interaction of personalities of the student and the authority-source would significantly affect learning outcomes.

The major analytical purpose of this practicum was to determine

the impact of the congruence of personality styles between the student and the instructor relative to student achievement. As this was so, and as the experimental method of investigation was employed, it was felt that the endeavor was an appropriate one for the Applied Educational Research and Evaluation module.

Chapter 3

METHODOLOGY

The methodology that was employed in this practicum is presented in this chapter under the headings of (1) procedures, (2) hypotheses, (3) definition of terms, (4) basic assumptions, (5) limitations of the study, (6) individual practicum responsibilities, and (7) procedures inconsistent with the practicum proposal justified.

Procedures

This study employed a self-administered, closed-ended questionnaire to determine dogmatic personality types of participating students and faculty at El Paso Community College. The questionnaire consisted of 50 items: a 20-item short form of the D Scale; 15 reversed F Scale items; and a 15-item Belief in the Bill of Rights Scale (Appendix A).

The questionnaire was administered to five instructors of political science, as well as to students in 14 of their classes. This was accomplished in the Fall of 1975, during the final examination period. While the questionnaire was voluntary in nature, it was reported by all participating instructors that virtually every student in attendance completed the questionnaire willingly and with outward enthusiasm.

Responses to the above questionnaire were recorded in the form of a six-point Likert Scale (+3 to -3), with the zero having been eliminated. These responses were then recoded onto computer code sheets as positive integers (a change from +3/-3 to +6/+1), the larger the interger

representing the greater the degree of the individual's dogmatic response. These recoded responses, as well as accompanying demographic data, were then transferred onto computer cards for analytical purposes. Identification of the responses was by social security number.

All responses were then fed into the computer, and three programs run to interpret the data. First, a set of descriptive statistics was generated for the punched data through the use of the SPSS "FREQUENCIES" program (Appendix C). Next, each individual's D Scale score was developed from the raw test scores using a simple additive index routine, and a second data deck encompassing this new variable generated automatically (Appendix D). Finally, certain data transformations were conducted and selected demographic and student achievement data were analyzed in relationship to dogmatic personality styles through the use of the SPSS "CROSSTABS" program (Appendix E). In this program, the array of D Scale scores (interval level data) were recoded as being either High or Low D Scale in determining dogmatic personality styles (nominal level data). The criteria for this was whether the individual's D Scale score fell above or below the median D Scale score for the total population. Next, contingency tables were generated compairing dogmatic personality styles with the five demographic variables of income, education, military experience, Catholicism, and ethnicity, in an effort to confirm the existing literature. Finally, a similar table was produced to analyze the correlationships between student achievement and the congruence of the student's personality style with that of his or her instructor.

The chi square statistic was employed to determine the level of significance of the findings. This test was selected for use because of

the level of the data being employed (nominal), as well as the contingency table format of the data. A $p>.05$ was considered acceptable in determining the level of significance of the findings.

Hypotheses

Hypotheses that were used throughout this study were:

1. that dogmatism as measured by D Scale scores will be inversely and significantly correlated with:
   1.1 income;
   1.2 education; and
   1.3 military experience; and
2. that dogmatism as measured by D Scale scores will be positively and significantly correlated with:
   2.1 Catholicism; and
   2.2 race/ethnicity; and
3. that a congruence of dogmatism (D Scale scores) between students and instructors will be positively and significantly correlated to successful student achievement in the learning experience; that:
   3.1 high D Scale scores for both students and faculty will correlate positively and significantly with high student achievement;
   3.2 low D Scale scores for both students and faculty will correlate inversely and significantly with high student achievement;
   3.3 high D Scale scores by students and low D Scale scores by faculty will correlate inversely and significantly with high student achievement; and
   3.4 low D Scale scores by students and high D Scale scores by

faculty will correlate inversely and significantly with high student achievement.

Definition of Terms

Dogmatism was measured through the use of the short-form D Scale developed by Troldahl and Powell (1965). The higher the score attained on the D Scale (a potential maximum of 240), the higher the level of dogmatism (closedness of the cognitive system); the lower the score attained on the D Scale (a potential minimum score of 80), the lower the level of dogmatism. High D Scale was defined as all those scores that were greater than the median D Scale score for the total population (Md = 134.389); low D Scale was defined as all those scores that were less than or equal to the median D Scale score for the total population.

The population utilized in this study consisted of selected students and faculty at El Paso Community College during the Fall of 1975. Students consisted of all full-time day students in attendance for their final examination in 14 sections of political science conducted by the participating faculty members (N = 227). Faculty consisted of five volunteer members teaching political science 3110 (introduction to American government) and 3111 (introduction to comparative state and local government).

Student achievement was based upon the student's final course grade. High student achievement was defined as an "A" or "B"; low student achievement was defined as all grades other than an "A" or "B".

Basic Assumptions

One assumption of this study was that its actual population reflected a normal distribution for such student/faculty universes, and

that the data extracted from the sample was able to be subjected to parametric statistical tests.

A more fundamental assumption of this study was that the D Scale did, in fact, measure the dogmatic component of an individual's psychology.

Limitations of the Study

The major limitations of this study were with the stratified population of the sample. All of the respondents were college-level students and faculty. This makes generalizability of the findings to other populations difficult. Moreover, the entire population was further stratified to include only those people having a direct relationship to political science, eliminating any possibility of controlling for course content as an intervening variable. Lack of controls over the amount of prior knowledge of the student, as well as the ideosyncratic teaching strategies of the instructors, further limited this study. None of these limitations, however, detracted from the primary purpose of the endeavor, i.e., that of determining the impact of the congruence of faculty and student personalities upon student achievement.

Individual Practicum Responsibilities

PRACTICUM ACTIVITY	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY
1. Write Abstract	Reyes	Nelson
2. Write Introduction	Reyes	Nelson
3. Write Background and Significance	Nelson	Reyes
4. Develop Procedures	Nelson	Reyes
5. Develop Instrument	Reyes	Nelson
6. Data Coding and Punching	Nelson	Reyes

7.	Data Analysis and Results	Nelson/Reyes	--
8.	Recommendations	Nelson/Reyes	--
9.	Individual Summaries	Nelson/Reyes	--
10.	Compile Appendixes	Reyes	Nelson

Procedures Inconsistent With the Practicum Proposal Justified

In comparing the procedures that were used with those that were proposed, a number of changes will be noted. In general, these changes are adjustments that had to be made when faced with the implementation of the proposal.

The population changed in two ways. First, the number of faculty was reduced from six to five because of last-minute logistical problems. One faculty member neglected to pick up his materials, and they could not be delivered to him soon enough for him to administer. Also, the 10 per cent sample of students was reviewed and rejected as being too small a population to generate contingency tables compatible with the use of the chi square statistic. Therefore, all of the student responses were tabulated and used in the final analysis.

Next, the computer program that was used in the analysis of the data had to be changed at the last minute due to technical problems. The spindle that housed the disk used for the NUCROS program on the computer had broken. Therefore, the SPSS packaged programs were employed; yet, the analysis conducted was essentially the same.

Finally, the hypothesis and definition sections of the proposal were expanded as the need became evident. None of the logic or definitions that appeared in the proposal, however, have been changed in any substantive manner.

Chapter 4

FINDINGS

The study's findings are presented in this chapter under the headings of (1) the population described, (2) the questionnaire applied, (3) dogmatism and income, (4) dogmatism and education, (5) dogmatism and military experience, (6) dogmatism and religious catholicism, (7) dogmatism and race/ethnicity, and (8) congruent personality styles and student achievement.

The Population Described

The first point that had to be addressed before investigating the hypotheses was the representativeness of the sample population utilized in the study. It had been assumed that a random sample of students had been selected. They should, therefore, be similar in composition to the total college population.

Table One presents the demographic breakdown of the College's student body population for the Fall of 1975, as presented to the Board of Trustees by the Office of Student Personnel Services. Table Two presents similar data regarding the study's sample. The three variables that are presented in both tables are those of sex, age, and ethnicity; they were used, therefore, as measurable indicators of the similarity of the two groups.

Visual inspection of the two tables revealed the strong similarity of the study's population to the total population for El Paso Commu-

Table 1. Demographic composition of the total student population of El Paso Community College for the Fall of 1975, by per cent

Variable	Per cent
Sex:	
Male	70.1
Female	29.9
	100.0
Age:	
0-20	18
21-25	23
26-35	32
36-45	16
46-55	8
56-up	3
	100
Ethnic:	
American Caucasian	36
American Indian	1
American Negro	5
American Oriental	1
American Spanish Surname	56
Other	1
	100

Cardenas, Raul. "Report from the Office of Student Personnel Services." Agenda, El Paso Community College Board of Trustees. El Paso: El Paso Community College, 21 October 1975.

Table 2. Demographic Composition of the total student/faculty population utilized in the present study, by frequency and per cent (N = 232)

Variable	#	%
Sex:		
Male	160	69.0
Female	72	31.0
	232	100.0
Religion:		
Catholic	147	63.4
Fundamentalist	46	19.8
Protestant	21	9.1
Jewish	2	0.9
Other	3	1.3
None	13	5.6
	232	100.0
Annual Family Income:		
0- 4999	45	19.4
5000- 8999	60	25.9
9000-13999	82	35.3
14000-19999	27	11.6
20000-Above	13	5.6
No Response	5	2.2
	232	100.0
Years of Military Service:		
0- 3	121	52.2
4- 9	21	9.1
10-15	1	0.4
16-20	7	3.0
More than 20	36	15.5
No Response	46	19.8
	232	100.0

Variable	#	%
Age:		
16-20	55	23.7
21-25	64	27.6
26-30	34	14.7
31-35	15	6.5
36-40	13	5.6
41-45	22	9.5
46-50	12	5.2
51-55	9	3.9
56-60	2	0.9
61-65	6	2.6
	232	100.0
Race/Ethnicity:		
Anglo	84	36.2
Black	12	5.2
Hispanic	118	50.9
Other	17	7.3
No Response	1	0.4
	232	100.0
Education in Years:		
0	1	0.4
8	1	0.4
10	1	0.4
11	1	0.4
12	80	34.5
13	75	32.3
14	59	25.4
15	6	2.6
16	8	3.4
	232	100.0

nity college. Thus, for sex, the 69:31 ratio of the study's population (male to female) virtually mirrored the 70:30 ratio of the total student population for the college. While not as striking, the age component was also quite similar, as were the figures for ethnicity. Product-moment correlations were derived for these variables (interval level data), with the following results: (1) for the sex component, $\underline{r}$ = +1.00; (2) for age, $\underline{r}$ = +0.83; and (3) for ethnicity, $\underline{r}$ = +0.99.

The Questionnaire Applied

The next point to be addressed was the successfulness of the questionnaire under actual field conditions. As was stated previously, it was reported to us that students appeared willing and enthusiastic about responding to its items, but had the items been understood? And had the D Scale items in particular been successful in separating and typing the respondents?

Two methods were employed in responding to the first concern, i.e., whether or not the items had been understood. First, students were asked upon completion of the questionnaire if they had had problems in understanding any of the items. The only concerns that were pointed out had to do with demographic items. In particular, many women hadn't understood how to respond to the question regarding military experience; that is, should they have selected the 0-3 year response, or should they not have responded at all? There was also some concern voiced over the need for their social security number.

Second, a number of questionnaire items had paired naturally with reversed items on the instrument. Consistent responses to both items required answers in opposition to each other. Table Three presents the responses received on two such items. Visual inspection of these

responses revealed a high level of consistancy for the respondents. A tau-Gamma measure of association statistic (for ordinal level data) was derived for these items, revealing a γ of +0.83.

Table 3. Degree of association between two questionnaire items requiring opposite types of responses, measured by tau-Gamma statistic.

Item:	Response: +3	+2	+1	-1	-2	-3
Religious belief and worship should not be restricted by law.	135	39	19	16	12	11
Some religious groups should not be allowed the same freedom as others.	21	13	13	20	38	127

N = 232

γ = +0.83

Table Four responds clearly to the concern of whether or not the D Scale was successful in separating and typing the study's population. This table presents the distribution of D Scale scores generated for each of the 232 respondents. Of particular note was the broad array of D Scale scores, with an obtained range of 160 out of a possible range of 200.

The configuration of the distribution was also worthy of note. There was a mean score of 135.362, a median score of 134.389, and a modal score of 142.000, creating a distribution pattern skewed only slightly to the left (skewness = 0.064). Also, the peakedness of the curve deviated only slightly from that of normality (kurtosis = 0.360). Using

Table 4. Distribution of student and faculty D Scale scores (N = 232)

Score	Number	Score	Number	Score	Number
58	2	114	1	156	3
64	1	116	6	158	6
66	1	118	8	160	4
68	2	120	4	162	2
74	2	122	4	164	3
80	1	124	6	166	2
82	1	126	11	168	3
84	2	128	4	170	1
88	1	130	11	172	6
90	1	132	8	178	3
92	4	134	9	184	5
94	1	136	10	186	2
96	3	138	3	188	1
98	1	140	5	190	1
100	5	142	13	194	2
102	3	144	9	196	2
104	4	146	5	206	1
106	4	148	6	210	2
108	3	150	5	214	1
110	2	152	4	218	1
112	1	154	4		232

Mean = 135.362
Median = 134.389
Mode = 142.000

Standard Deviation = 29.604
Skewness = 0.064
Kurtosis = 0.360

the median score as the separating point between high and low D Scale scores (Low = 40-134; High = 136-240), there were 115 respondents classified as High Dogmatics, and 117 as Low Dogmatics.

The confidence of the study's population and the questionnaire clearly addressed, it was then necessary to proceed to an investigation of the research hypotheses.

Dogmatism and Income

The survey of the literature had led this study to predict a significant and inverse relationship between dogmatism and income. This was reflected in hypothesis 1.1: dogmatism as measured by D Scale scores (dependent variable) will be inversely and significantly correlated with income (independent variable).

The null hypothesis, therefore, was stated in the following manner: there will be no significantly inverse correlation between dogmatism and income.

Analysis of the null hypothesis took the form of constructing a contingency table, and subjecting the variance of the observed frequencies to the chi square test to determine the level of significance. The .05 level was selected in order to reject the null hypothesis. The results are presented in Table Five.

Visual inspection of Table Five revealed only a slight tendency for dogmatism to be inversely correlated with income. Thus, there were more high D Scale respondents than low below the $9,000 annual family income bracket, and more low D Scale respondents than high in every income category above $9,000. However, the difference between the observed frequencies and the expected frequencies was slight, and not nearly significant at the .05 level. In fact, statistically there was greater than one

Table 5. Crosstabulation of the dogmatism variable with that of income, by frequencies (population = students and faculty, with non-responses removed). Parentheses denotes the expected frequencies derived from the marginals

Income:	Dogmatism: Low	High
0- 4999	19 (22.4)	26 (22.6)
5000- 8999	27 (29.9)	33 (30.1)
9000-13999	42 (40.8)	40 (41.2)
14000-19999	17 (13.4)	10 (13.6)
20000-Above	8 (6.5)	5 (6.5)

N = 227

x^2 = 4.270

.05 with 4 d.f. = 9.49

possibility in three that the variance was caused by chance. The null hypothesis, therefore, could not be rejected in favor of the hypotheses.

Dogmatism and Education

The literature survey had also led this study to predict a significant and inverse relationship between dogmatism and education. Prior

research had clearly suggested that as the amount of education increased for an individual, any propensities he or she might have towards dogmatism would thereby be reduced. This relationship was reflected in hypotheses 1.2: dogmatism as measured by D Scale scores (dependent variable) will be inversely and significantly correlated with education (independent variable).

The null hypothesis was stated in the following manner: there will be no significantly inverse correlation between dogmatism and education.

Analysis of the null hypothesis again took the form of constructing a contingency table, and subjecting the variance of the observed frequencies to the chi square test to determine the level of significance of the findings. The initial results are presented in Table Six.

The initial crosstabulation (Table Six) contained too many cells with observed frequencies falling below the level required by the chi square test. Therefore, the table had to be reconstructed by combining cells in order to increase the cell frequencies to equal or exceed the number five (Blalock:1972, 285). This was achieved by combining the

Table 6. Crosstabulation of the dogmatism variable with that of education, by frequencies (population = students and faculty)

	Education (in years completed):								
Dogmatism:	0	8	10	11	12	13	14	15	16
High	1	1	1	1	41	42	22	3	3
Low	0	0	0	0	34	33	37	3	5

N = 232

number of school years completed in a manner that reflected the commonly-accepted educational milestones (high school, college lower division, college upper division). In the process, two individuals falling below high school level experience were dropped from the analysis. These results are presented as Table Seven.

Inspection of Table Seven revealed a very slight tendency for dogmatism to be inversely correlated with education. There were more high D Scale respondents than low in the 10-12 year category, and more low D Scale respondents than high in both the 13-14 and 15-16 year categories. Moreover, the two individuals who were dropped from Table Seven

Table 7. Crosstabulation of the dogmatism variable with that of education, with the data reorganized to meet chi square specifications, by frequencies (population = students and faculty, with two individuals removed for falling below high school level experience). Parentheses denote the expected frequencies derived from the marginals

	Dogmatism: Low	Dogmatism: High
Education: 10-12 High School	39 (41.7)	43 (40.3)
13-14 Lower Division	70 (68.2)	64 (65.8)
15-16 Upper Division	8 (7.1)	6 (6.9)

N = 230

X^2 = 0.684

.05 with 2 d.f. = 5.991

were both High Dogmatics (see Table Six). The difference, however, between the observed frequencies and the expected frequencies was small, and nowhere near significant at the .05 level. Indeed, an X^2 of 0.684 with two degrees of freedom suggests that there was greater than seven possibilities in ten that the variance was caused by chance. The null hypothesis, therefore, could not be rejected in favor of the hypothesis.

Dogmatism and Military Experience

The survey of the literature had once again led this study to predict a significant and inverse relationship between dogmatism and its independent variable, military experience. This had been striking because most researchers had postulated a direct correlation between the two variables, yet the opposite had consistently been found to be the case (see this study;8). These past findings were reflected in hypothesis 1.3: dogmatism as measured by D Scale scores (dependent variable) will be inversely and significantly correlated with the length of military experience (independent variable).

The null hypothesis, therefore, was stated in the following manner: there will be no significantly inverse correlation between dogmatism and the length of military experience.

Analysis of the null hypothesis was to be the same for this variable as it had been for income and education: a contingency table was to be constructed, and the variance of the observed frequencies was to be subjected to the chi square test to determine the level of significance of the findings. The .05 level was again to be employed in seeking to reject the null hypothesis. The initial results are presented in Table Eight.

Visual inspection of Table Eight pointed to a number of problems

with the data that was sufficiently grave so as to make any analysis of them highly suspect. First, fully a fifth (19.8%) of the sample population had refused to respond to this item at all, suggesting a high level of confusion as to how to answer the item appropriately. This confusion had also been registered verbally by many respondents immediately upon completion of the questionnaire. Thus, many respondents who had never served in the military had been confused over whether to check the 0-3 category, or to not respond to the item at all. Second, because of this confusion on the part of respondents, there was a serious question as to how to interpret the 0-3 responses: as a measure of military experience (first day in the military to third year); or of military non-experience (no military experience at all)? A conservative interpretation suggested a degree of both, thereby rendering the data tainted beyond any level of confidence. Third, to have omitted these data from the analysis would have been to reduce the sample population from 232 to 65, a reduction of 72%. Also, to have omitted the data would have been to undermine the logic of the data by having omitted those individuals who

Table 8. Crosstabulation of the dogmatism variable with that of military experience, by frequency (population = student and faculty)

	Years of Military Experience:					
Dogmatism:	0-3	4-9	10-15	16-20	21-up	No Response
High	61	10	0	5	17	22
Low	60	11	1	2	19	24

N = 232

had had from one day to three years experience in the military, thus performing the analysis on those with four years experience or more. Fourth, inspection of the distribution also determined three cells in the cross-tabulation to have observed frequencies below the minimum of five nominally required by the chi square statistic, with little possibility of combining these cells with other cells in any logical way and at the same time retaining credibility for the resultant table. Because of these circumstances, it was decided, therefore, to abort any further analysis of this data. Thus, the null hypothesis could not be rejected in favor of the hypothesis, and confirmation of the prior research could not be determined.

Dogmatism and Religious Catholicism

The literature survey had led this study to predict a significant and direct correlation between dogmatism and religious catholicism. This was reflected in hypothesis 2.1: dogmatism as measured by D Scale scores (dependent variable) will be significantly and positively correlated with religious catholicism (independent variable).

The null hypothesis, therefore, was stated in the following manner: there will be no significantly positive correlation between dogmatism and religious catholicism.

To analyze the null hypothesis, a simple 2 x 2 contingency table was constructed, and the variance of the observed frequencies was subjected to chi square analysis to determine the level of significance of the findings. The .05 level was again considered acceptable to reject the null hypothesis. The results are presented in Table Nine.

Inspection of Table Nine revealed a definite tendency for dogmatism to be positively correlated with catholicism. Thus, there were more

Table 9. Crosstabulation of the dogmatism variable with that of religious catholicism, by frequency (population = students and faculty). Parentheses denote the expected frequencies derived from the marginals.

Catholic:	Dogmatism: Low	High
Yes	70 (74.1)	77 (72.9)
No	47 (42.9)	38 (42.1)

N = 232
X^2 = 1.249
.05 with 1 d.f. = 3.841

high D Scale respondents than low who typed themselves as Catholic, and more low D Scale respondents than high who selected a religious preference other than Catholic. The difference between the observed frequencies and the expected frequencies, however, was not significant at the .05 level. Rather, an X^2 of 1.249 with one degree of freedom suggests that there was about one possibility in four that the distribution was caused by chance. The null hypothesis, therefore, could not be rejected in favor of the hypothesis.

Dogmatism and Race/Ethnicity

As with the findings regarding the relationship between dogmatism and catholicism, the literature review had led this study to postulate a significant and positive correlation between dogmatism and race/ethnicity.

Thus, Smith and Prothro (1957) had presented clear and convincing evidence of Blacks having a significantly higher propensity for offering authoritarian type responses to test items than Anglos. This relationship was reflected in hypothesis 2.2: dogmatism as measured by D Scale scores (dependent variable) will be significantly and positively correlated with race/ thnicity (independent variable).

The null hypothesis was stated thusly: there will be no significantly positive correlation between dogmatism and race/ethnicity.

Analysis of the null hypothesis was similar to the proceding analyses: a contingency table was constructed, and the variance of the observed frequencies was subjected to the chi square test to determine the level of significance of the findings. The .05 level was again employed as the appropriate level of confidence in seeking to reject the null hypothesis. The results are presented in Table Ten.

Visual inspection of Table Ten revealed a definite tendency for dogmatism to be positively correlated with race/ethnicity, at least regarding the Anglo and Hispanic derivations. Thus, there were more low D Scale scores than high among Anglo respondents, and more high D Scale scores than low among Hispanic respondents. Blacks, however, were equally divided between low and high D Scale scores, thereby weakening the positiveness of the overall correlation (not significant at the .05 confidence level). Inspection of the "Other" category (by reviewing the original questionnaire responses) yielded the following: three Asians; two American Indians; and twelve "Chicanos." These findings pointed to the desirability of reorganizing the data into a second contingency table, and of "forcing" the data into a dichotomous mold to investigate the Anglo and Hispanic components further. This was done, and the

Table 10. Crosstabulation of the dogmatism variable with that of race/ethnicity, by frequency (population = students and faculty, with non-responses omitted). Parentheses denote the expected frequencies derived from the marginals

Race/Ethnicity:	Dogmatism: Low	High
Anglo	48 (42.5)	36 (41.5)
Black	6 (6.1)	6 (5.9)
Hispanic (Spanish surname)	56 (59.8)	62 (58.2)
Other	7 (8.6)	10 (8.4)

N = 231

X^2 = 2.537

.05 with 3 d.f. = 7.815

results presented in Table Eleven.

Inspection of Table Eleven revealed once again a positive correlation between dogmatism and race/ethnicity of the Hispanic variety. Yet, while the pattern of the array in Table Eleven was similar to that of Table Ten, the strength of the variance between the observed and expected frequencies became greater. Thus, while the X^2 of Table Ten approached a level of significance of .25, that of Table Eleven reaches the level of .10. Still, however, the .05 significance level was not

Table 11. Crosstabulation of the dogmatism variable with that of race/ethnicity, with the data reorganized from Table Ten, by frequency (population = students and faculty, with "chicanos" incorporated with Hispanics, and Blacks, Asians and native American Indians removed from the analysis). Parentheses denote the expected frequencies derived from the marginals

Race/Ethnicity:	Dogmatism: Low	High
Anglo	48 (42.0)	36 (42.0)
Hispanic	59 (65.0)	71 (65.0)

N = 214

X^2 = 2.822

.05 with 1 d.f. = 3.841

attained, and therefore the null hypothesis could not be rejected with confidence in favor of the hypothesis.

Congruent Personality Styles and Student Achievement

Rokeach's theory of dogmatism, substantiated by prior research, had led this study to postulate a significantly positive correlation between congruent student/faculty personality styles and student achievement. That is, it was felt that learning would be enhanced if the new material that was to be learned was presented by an authority-source that was compatable with the learner, rather than one that was not. This relationship was reflected in hypothesis 3: a congruence of student and

faculty dogmatism as measured by D Scale scores (independent variable) will be significantly and positively correlated with successful student achievement (dependent variable).

The null hypothesis, therefore, was stated in the following manner: there will be no significantly positive correlation between congruent student/faculty dogmatism and successful student achievement.

To analyze the null hypothesis, a simple 2 x 2 contingency table was constructed compairing matched and unmatched dogmatism personality styles and high ("A" and "B") and low (all else) student achievement. Tha variance of the observed frequencies was subjected to chi square analysis to determine the level of significance of the findings. A p of .05 was considered an acceptable level upon which to reject the null hypothesis with confidence. The results are presented in Table Twelve.

Visual inspection of Table Twelve revealed a positive correlation

Table 12. Cro stabulation of the student/faculty personality style variable and that of student achievement, by frequency (population = students with matching faculty). Parentheses denote the expected frequencies derived from the marginals

	Personality Styles: Unmatched	Matched
Student Achievement: High	49 (56.7)	63 (55.3)
Low	66 (58.3)	49 (56.7)

N = 227
X^2 = 4.190
.05 with 1 d.f. = 3.841

between congruent student/faculty dogmatism styles and successful student achievement. Thus, there were more high grades than low among those students whose dogmatic personality styles matched that of their instructor, and more low grades than high among those students whose dogmatic personality style did not match that of their instructor. Moreover, the strength of this relationship yielded an X^2 of 4.190, statistically significant at the .05 level. It was possible, therefore, to reject the null hypothesis, thereby confirming the hypothesis.

The frequency distribution does indicate that students who are matched with faculty on dogmatism do achieve in significantly higher proportions that those who are not matched.

Chapter 5

CONCLUSION

This chapter will provide an extended discussion of the conclusions stemming from the present study's results, and implications of these conclusions. It will also set forth a set of recommendations for readers of this study to consider, as well as individual summary statements of the two authors.

Discussion

A number of conclusions stem from this practicum's findings. First, it is evident that the sample population used in the study was highly representative of El Paso Community College's total student body population. This is apparent from the extremely strong product-moment correlations that were derived for the two population's sex, age, and ethnicity figures (r = +1.00, +0.83, and +0.99, respectively, out of a possible range for r of +1.00 to -1.00), and reflective, perhaps, of the fact that all students receiving college degrees in Texas were required at that time, as they are today, to take the two courses that were utilized in this study. The significance of this fact is that generalizability of the findings from the sample population to the college's total population may be made with greater confidence than if the representativeness of the sample group had not been as strong as it was.

Second, it is equally evident that the modified D Scale used in this study proved to be a sound measuring device. The reliability of

the instrument is forcefully underwritten by the very strong tau-Gamma association that was derived for two of the instrument's items that required opposite-type responses (tau-Gamma = -0.83, out of a possible range for tau-Gamma of +1.00 to -1.00). Further, the ability of the instrument to provide discrete separation of the respondents is clearly demonstrated by the broad range of D Scale scores that were obtained during the study (an obtained range of 160 out of a possible range for the instrument of 200). That the D Scale is measuring "degree of dogmatism" must, of course, be assumed; however, that the direction of the observed scores is in the appropriate direction is strongly supported by subjective observations that were made of the relative openness and/or closedness of selected, participating students to new and challenging concepts. The significance of this conclusion is that the validity of the findings are clearly supported, and their interpretation and application to Rokeach's general theory of dogmatism may be made with a high degree of confidence.

Third, it is further evident from this study's findings that the overall personalities of students at El Paso Community College reflect broad variations in their dogmatic component, ranging from very open, cognitively, to very closed. This is most apparent from the obtained range mentioned above, as well as the minimum and maximum obtained D Scale scores (58 and 218, respectively, out of a possible minimum and maximum score for the instrument of 40 and 240). This broad range is probably reflective of the heterogeneous composition of students generally found at open-door community colleges, and is probably greater than would be found in a more selective, degree-bound institution of higher education. As a matter of fact, the faculty who participated in the

study (all products of the more selective, degree-bound type of institution) obtained a range of only 38, with a minimum and maximum score of 68 and 106, respectively. These are probably invalid figures, however, for the number of faculty was too small for statistical confidence (five), and all of them were from the area of liberal arts (political science).

Less evident is this study's confirmation of prior research findings. In fact, such confirmation was inconclusive. Thus, while four of the five variables that were analyzed in relation to D Scale scores did, in fact, respond in the predicted direction (the military experience variable having been omitted from the analysis due to irresolvable data collection problems), none of the relationships were strong enough to meet the .05 significance level that was selected in order to reject the null hypotheses. Indeed, none of the four relationships met even a .20 level of significance, except for the "forced" analysis of the D Scale scores in relation to race/ethnicity data. This is disturbing, indeed, when the confidence of the literature had been so strong! Suggested reasons for the differences in the present findings and those of the past would have to include: (1) the possibility of having utilized incompatable definitions for the demographic variables that were being analyzed; (2) a difference in sample populations, both in terms of size and substantive composition; (3) a difference of time between the present study and previous studies, and the effect it may have had upon the psychology of the demographic groups in question; and (4) the soundness of the assumption made by this study (and others) as to the commonality that existed between F Scale studies and D Scale studies re: their correlation with selected demographic variables (see this study:8). In any event, this study's findings were inconclusive regarding confirmation of

prior research findings, and as such underscores the continuing need to strengthen our understanding of the elemental linkages of these variables with that of the concept of dogmatism.

Finally, it may be concluded from this study's findings that the authority-source of the new academic material does have an appreciable effect upon the student's ultimate mastery of the material. Thus, students who attained D Scale scores similar to those of their instructors (high D Scale matched with high D Scale, or low D Scale matched with low D Scale, respectively) attained high achievement outcomes in significantly greated proportion than did those students whose D Scale scores were dissimilar to those of their instructors (high D Scale matched with low D Scale, or low D Scale matched with high D Scale, respectively). This is reflected by the fact that among students who had D Scale scores similar to those of their instructors, 63 attained high achievement outcomes, while 49 did not; and among students who had scores that were dissimilar to those of their instructors, 49 attained high achievement outcomes, while 66 did not. Further, the relationship was statistically significant at the .05 level.

The significance of this finding is that it provides confirmation of the hypothesis that the authority-source of the academic content does operate as an intervening variable within the learning process, as was suggested by Powell (1962) and Erlich and Lee (1969). It also provides confirmation for this study's primary hypothesis.

Implications

What are the implications of the above conclusions? This question must be approached with a clear sense of cautious consideration.

On the one hand, it may be argued that the conclusions suggest a

matching of students with psychologically compatable instructors prior to the commencement of the learning process. Indeed, it may even be argued by some that such factors be given serious consideration during the recruitment and employment of the teaching faculty, in order to assemble a staff that reflects the psychological composition (or needs, perhaps) of the institution's student body.

Such an interpretation as this, however, is blatantly absurd, grandiosely Orwellian in nature, and administratively unsound. Indeed, such an interpretation flies in the face of reality by refusing to consider the rapid changes in composition that constantly occur among community college student populations. In this vein, consider briefly the effects of the G.I. Bill of Rights, the Federal Education Act of 1972, and the concept of continuing education upon the make-up of community college students. Augment this with the phasing in and out of technical-vocational programs, para-professional programs, and prison and prison-release programs and one might conclude that the composition of community college student bodies are in constant revolution, and as such, undermine the implication for the conclusions suggested above.

On the other hand, it may be argued that D Scale scores for students, judiciously employed by competent instructors, can enhance the student's learning experience by enabling that instructor to implement individualized instruction in an informed and deliberate manner with his or her students. This argument bases its reasoning squarely upon the importance of the authority-source in the process of learning new material. Recall, if you will, that Rokeach organized all of a person's beliefs along a central-peripheral dimension (see this study:6). Thus, he felt that a central region of beliefs existed, consisting primarily

of self-acquired cognitions about the world, oneself, and others in general; as well as an intermediate region of beliefs consisting of one's relationship to authority and those identified with authority; and a peripheral region consisting of beliefs derived from authority figures.

The D Scale has been shown to be an effective instrument in providing information about an individual's intermediate cognitive region, as well as an insight into the positiveness or negativeness of his or her peripheral region. That is, it provides some understanding as to the relationship of the individual to authority and those identified with authority (the authority-source), as well as his or her general relationship to the beliefs emanating from that authority-source. If an individual attains a high D Scale score, it indicates a comfortableness with, or even a desire for, authority and authority figures. In such cases, it may be reasoned that new concepts will be transferred most comfortably to the individual when packaged in an authoritarian manner (utilization of a positive peripheral region): material highly structured in a clear and precise way; behavioral objectives employed to their fullest; learning alternatives highly structured and kept to a minimum; information regarding new concepts presented or supported by leading authorities in the field; student-instructor communication maintained at a distance and in a rigid, pedagogical way, etc.

To employ such methods with a low D Scale individual, however, appears to run the risk of psychological rejection of the new material, based upon his/her repugnance for authority in general. Thus, the instructor, when made cognizant of this possibility, may seek to package the new material in a less authoritarian manner emphasizing self-discovery (utilization of the central region; non-utilization of the negative peri-

pheral region): independent readings with oral assessments; field observations of on-going events; direct participation through various types of internships; etc.

It must be pointed out, however, that while the former approach would, theoretically at least, frustrate anti-authoritarian low D Scale students, the latter approach would confuse high D Scale students by robbing them of the structure and direction that is psychologically required by them. Ultimately, then, individualized instructional curricula should be developed and implemented to deal with this dichotomy.

Recommendations

Based upon the previous findings and conclusions, the following recommendations are submitted for readers to consider.

Implementation of findings. It is recommended that the D Scale be administered to students on the first day of class, and the results utilized in determining learning strategies for individual students. To do so need not be envisioned as an impersonal, authoritarian placement of students into molds that they disapprove of; rather, such information could fit comfortably into a contract system whereby the instructor and the student utilize this as well as other information (academic goals, aspirations for the course, vocation, avocation, previous experience, amount of time able to be invested in the course, etc.) to develop a mutually agreeable set of learning strategies designed to meet the course objectives.

Further research. It is recommended that additional research be conducted to further clarify the relationship between dogmatism and learning. In this vein, it is recommended that:

1. additional validation of this practicum's findings be made through a replication of the study, with a consideration of the following alterations:
   1.1 a clarification of the military experience item that caused invalid data to be collected;
   1.2 an elimination of those students who earned incomplete (I) grades from the analysis (this was not a significant problem in the present study, but it was a problem); and
   1.3 an enlargement of the faculty universe under study (perhaps by adjusting the total universe to include one or two classes per instructor, no more than that, to keep the total number of students within manageable proportions, and yet increase the number of faculty members); and
2. various research designs be employed to alter the analytical focus of the research, yielding thereby an increased understanding of the variables involved, with a consideration of the following:
   2.1 implementation of the D Scale at the beginning and the end of the class to determine the effect (if any) the class may have upon the level of dogmatism; and
   2.2 administration of the D Scale to two sets of students at the beginning of their classes, thereafter controlling for learning strategies utilized in the separate classes (group one = highly structured and controlled by the external authority-source, i.e., the instructor; group two = strong emphasis upon unstructured self-discovery methods with little control from external authority source), with a final analysis of original D Scale scores and final student achievement outcomes.

Dissemination of findings. It is recommended that a workshop presenting these findings be developed for use in community college faculty development programs. Such a workshop would be most effective if it encompassed insights gleaned from this practicum, the results of recommendation 2.2 above, as well as actual classroom experience in using D Scale scores in tailoring learning strategies to the individual student. In the meantime, it is recommended that the results of this study be disseminated through the development of a journal article for placement in one of the national educational journals.

Summary Statement - Blaine Nelson

There have been a myriad outcomes from this practicum that have made its undertaking worthwhile. First and foremost, perhaps, has been the training it has afforded me and my associate in educational research methodology. It has been far too long since I have undertaken any similar project, and while the process was agonizing at many points along the way, the discipline it has created in me will have long-lasting effects.

Other outcomes would have to include a higher degree of tolerance that stems from any meaningful group endeavor, a reacquaintance with the value of the computer in my own personal research, a broadening of my own knowledge base by being exposed to literature from the field of psychology, as well as from the new knowledge that we ourselves generated.

Less personal were the values of this practicum to El Paso Community College, and to educational research at large. Regarding the former, the application of the findings of this practicum could assist the staff at E.P.C.C. in attaining to a greater degree than at present the institutional goal of individualized instruction. As presented else-

where in this chapter, the utilization of these findings could assist the faculty member in determining generally what types of learning strategies would be most appropriate for a given student, thereby rendering positive learning environments for more students than can normally be achieved in traditional group settings. Regarding the latter, these findings have confirmed the supposition of Powell (1966) and Erlich and Lee (1969) as to the importance of the authority-source as an intervening variable regarding dogmatism and learning, and thereby adding its weight to the validation of Rokeach's general theory of dogmatism. They have also provided the more general value of heuristically pointing the way to other relationships requiring investigation in the future.

Summary Statement - Robert Reyes

This practicum investigation has exposed me to faculty-student experimental research and the general use of the computer. This research practicum also allowed me to acquire new research methods and skills by exposing me to the Statistical Packages for the Social Sciences program. This research practicum has also answered some important questions vis-a-vis student-faculty relationships and improved instructional approaches at my educational institution.

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APPENDIX A. Questionnaire

RESEARCH QUESTIONNAIRE

DIRECTIONS: The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion.

We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the right margin according to how much you agree or disagree with it. Please mark every one.

+1: I AGREE A LITTLE

+2: I AGREE ON THE WHOLE

+3: I AGREE VERY MUCH

-1: I DISAGREE A LITTLE

-2: I DISAGREE ON THE WHOLE

-3: I DISAGREE VERY MUCH

Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case. Remember that there are no correct answers.

Items:	Circle your response:
1. If it weren't for the rebellious ideas of youth there would be less progress in the world.	+3 +2 +1 -1 -2 -3
2. Of all the different philosophies which exist in this world there is probably only one which is correct.	+3 +2 +1 -1 -2 -3
3. I'd like it if I could find someone who would tell me how to solve my personal problems.	+3 +2 +1 -1 -2 -3
4. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.	+3 +2 +1 -1 -2 -3
5. Books and movies ought to give a more realistic picture of life even if they show that evil sometimes triumphs over good.	+3 +2 +1 -1 -2 -3
6. The main thing in life is for a person to want to do something important.	+3 +2 +1 -1 -2 -3
7. Some people are born with an urge to jump from high places.	+3 +2 +1 -1 -2 -3
8. Man on his own is a helpless and miserable creature.	+3 +2 +1 -1 -2 -3

9.	Most people just don't know what's good for them.	+3 +2 +1 -1 -2 -3
10.	It is better to be a dead hero than to be a live coward.	+3 +2 +1 -1 -2 -3
11.	The government should prohibit some people from making public speeches.	+3 +2 +1 -1 -2 -3
12.	Newspapers and magazines should be allowed to print anything they want except military secrets.	+3 +2 +1 -1 -2 -3
13.	Science has its place, but there are many important things that can never possibly be understood by the human mind.	+3 +2 +1 -1 -2 -3
14.	In spite of what you read about the wild sex life of people in important places, the real story is about the same in any group of people.	+3 +2 +1 -1 -2 -3
15.	My blood boils whenever a person stubbornly refuses to admit he's wrong.	+3 +2 +1 -1 -2 -3
16.	There are two kinds of people in this world: those who are for the truth and those who are against the truth.	+3 +2 +1 -1 -2 -3
17.	In some criminal cases, a trial by jury is an unnecessary expense and shouldn't given.	+3 +2 +1 -1 -2 -3
18.	Religious belief and worship should not be restricted by laws.	+3 +2 +1 -1 -2 -3
19.	Some religious groups should not be allowed the same freedom as others.	+3 +2 +1 -1 -2 -3
20.	In some cases, the government should have the right to take over a person's land or property without bothering to go to court.	+3 +2 +1 -1 -2 -3
21.	It is only when a person devotes himself to an ideal or cause that life becomes meaningful.	+3 +2 +1 -1 -2 -3
22.	Foreigners in this country should always be allowed the same basic freedom that citizens have.	+3 +2 +1 -1 -2 -3

23. The police or F.B.I. may sometimes be right in giving a man the "third degree" to make him talk. +3 +2 +1 -1 -2 -3

24. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent. +3 +2 +1 -1 -2 -3

25. The findings of science may some day show that many of our most cherished beliefs are wrong. +3 +2 +1 -1 -2 -3

26. Some day it will probably be shown that astrology can explain a lot of things. +3 +2 +1 -1 -2 -3

27. Local police may sometimes be right in holding persons in jail without telling them of any formal charges against them. +3 +2 +1 -1 -2 -3

28. Certain groups should not be allowed to hold public meetings even though they gather peacebly and only make speeches. +3 +2 +1 -1 -2 -3

29. Some criminals are so bad that they shouldn't be allowed to have a lawyer. +3 +2 +1 -1 -2 -3

30. The United States and Russia have just about nothing in common. +3 +2 +1 -1 -2 -3

31. It is highly unlikely that astrology will ever be able to explain anything. +3 +2 +1 -1 -2 -3

32. One of the most important things children should learn is when to disobey authorities. +3 +2 +1 -1 -2 -3

33. If a person is accused of a crime he should have the right to know who is accusing him. +3 +2 +1 -1 -2 -3

34. Some of the petitions which have been circulated should not be allowed by the government. +3 +2 +1 -1 -2 -3

35. The business man and the manufacturer are much more important to society than the artist and the professor. +3 +2 +1 -1 -2 -3

36. The present is all too often full of unhappiness. It is only the future that counts. +3 +2 +1 -1 -2 -3

37. While I don't like to admit this even to myself, my secret ambition is to become a great man, like Einstein, or Beethoven, or Shakespeare. +3 +2 +1 -1 -2 -3

38. Obedience and respect for authority are the most important virtues children should learn. +3 +2 +1 -1 -2 -3

39. Persons who refuse to testify against themselves (that is, give evidence that would show that they are guilty of criminal acts) should either be made to talk or severely punished. +3 +2 +1 -1 -2 -3

40. Most people just don't give a "damn" for oohers. +3 +2 +1 -1 -2 -3

41. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups. +3 +2 +1 -1 -2 -3

42. In this complicated world of ours the only way we can know what's going on is to rely on leaders or expers who can be trusted. +3 +2 +1 -1 -2 -3

43. In some cases, the police should be allowed to search a person or his home even though they do not have a warrant. +3 +2 +1 -1 -2 -3

44. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects. +3 +2 +1 -1 -2 -3

45. Most of the ideas which get printed nowadays aren't worth the paper they are printed on. +3 +2 +1 -1 -2 -3

46. The artist and professor are probably more important to society than the businessman or manufacturer. +3 +2 +1 -1 -2 -3

47. Most honest people admit to themselves that they have sometimes hated their parents. +3 +2 +1 -1 -2 -3

48. People ought to pay more attention to new ideas, even if they seem to go against the American way of life.

+3 +2 +1 -1 -2 -3

49. To compromise with our political opponents is dangerous because it usually leads to the betrayal of own side.

+3 +2 +1 -1 -2 -3

50. An urge to jump from high places is probably the result of unhappy personal experiences rather than something inborn.

+3 +2 +1 -1 -2 -3

DEMOGRAHIC DATA

1. Sex: (Check one) Male _____

   Female ____

2. Date of Birth: _____/ _____/ _____

   Social Secruity Number: _____/_____/_____

3. Religion: Catholic _____

   Protestant _____
   (Specify Demonination _____)

   Jewish _____

   Other (Specify)_____

   None _____

4. Enthic Background: Anglo _____

   Black _____

   Spanish Surname _____

   Other (Please specify) _____

   _____

5. Education: (Circle highest year completed)

   8 9 10 11 12 13 14 15 16

   HS GED Fr. Sop. Jr. Sr.

6. Annual Family Income: (Check one)

   0 to $4,990 _____ $5,000 to $8,999 _____

   $9,000 to $13,999 _____ $14,000 to $19,999 _____

   $20,000 and Over _____

7. Military Experience: (Circle one)

   0 to 3 yrs. _____ 4 to 8 yrs. _____

   8 to 15 yrs. _____ 15 to 20 yrs. _____

   20 and Over _____

APPENDIX B. Codebook

CODEBOOK

AUTHSTDY: Faculty-Student Authoritarianism at EPCC

I. Demographic Data

Column:	Variable:
1-2	FACNUMBR 01 = James Bell 03 = Margaret Langford 04 = Gerald Money 05 = Blaine Nelson 06 = Robert Reyes
3-8	CASEID 3-6 = Class and Section 7-8 = Student Respondent
9	SEX 1 = Male 2 = Female
10-11	AGE 01 = 16-20 02 = 21-25 03 = 26-30 04 = 31-35 05 = 36-40 06 = 41-45 07 = 46-50 08 = 51-55 09 = 56-60 10 = 61-65 11 = 66-up
12	RELIGION 1 = Catholic 2 = Fundamentalist 3 = Protestant 4 = Jewish 5 = Other 6 = None

Column:	Variable:
13	RACE 1 = Anglo 2 = Black 3 = Spanish Surname 4 = Other
14-15	YRSEDUCN Programmed by the number of years of education completed
16	INCOME 1 = to 4999 2 = 5000-8999 3 = 9000-13999 4 = 14000-19999 5 = 20000-Above
17	YRSMILIT 1 = 0-3 2 = 4-9 3 = 10-15 4 = 16-20 5 = More than 20
18	GRADE 1 = A 2 = B 3 = C 4 = D 5 = F 6 = X, W, I

II. Questionnaire

25-74	VAR001 TO VAR050 Six-point Likert Scales coded so that (6) = high dogmatic response and (1) = low dogmatic response.

III. Dogmatism Scale

75-79	DSCALE Sum of all item responses multiplied by two.

APPENDIX C. SPSS FREQUENCIES Program

SPSS - FREQUENCIES Program

```
RUN NAME          NOVA APPLIED RES AND EVAL PRACTICUM - DESCRIPTIVE STATISTICS
FILE NAME         AUTHSTDY,FACULTY-STUDENT AUTHORITARIANISM AT EPCC
VARIABLE LIST     CASEID,SEX,AGE,RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,GRADE,
                  VAR001 TO VAR 050,DSCALE
SUBFILE LIST      FACULTY (5), A1003 (20), B1010 (16), C1014 (14), D1008 (13),
                  E1015 (19), F1018 (10) G1002 (24), H1101 (16), J1005 (12),
                  K1006 (17), L1103 (17), M1011 (16), N1017 (16), P1007 (17)
INPUT MEDIUM      CARD
INPUT FORMAT      FIXED (F8.0,F1.0,F2.0,2F1.0,F2.0,3F1.0,6X,50F1.0,F5.2)
VALUE LABELS      SEX (1) MALE (2) FEMALE/
                  AGE (1) 16 TO 20 (2) 21 TO 25 (3) 26 TO 30 (4) 31 TO 35
                  (5) 36 TO 40 (6) 41 TO 45 (7) 46 TO 50 (8) 51 TO 55 (9) 56 TO 60
                  (10) 61 TO 65 (11) 66 & UP/
                  RELIGION (1) CATHOLIC (2)FUNDAMENTALIST (3) PROTESTANT
                  (4) JEWISH (5) OTHER (6) NONE/
                  RACE (1) ANGLO (2) BLACK (3) HISPANIC (4) OTHER/
                  INCOME (1) TO 4999 (2) 5000 TO 8999 (3) 9000 TO 13999
                  (4) 14000 TO 19999 (5) 20000 or above/
                  YRSMILIT (1) 0-3 YRS (2) 4-9 YRS (3) 10-15 YRS (4) 16-20 YRS
                  (5) OVER 20 YEARS
                  GRADE (1) A (2) B (3) C (4) D (5) F (6) X-W-I
VAR LABELS        YRSEDUCN,YEARS OF EDUCATION COMPLETED/
                  INCOME, ANNUAL FAMILY INCOME/
                  YRSMILIT,YEARS OF MILITARY SERVICE/
                  GRADE,FINAL GRADE IN COURSE/
                  DSCALE,TWENTY ITEM DOGMATISM SCALE
RUN SUBFILES      ALL
FREQUENCIES       INTEGER=SEX(1,2) AGE(1,11) RELIGION (1,6) RACE (1,4) YRSEDUCN
                  (0,16) INCOME(1,5) YRSMILIT(1,5) GRADE (1,6) DSCALE (40,240)
OPTIONS           6,8
STATISTICS        ALL
READ INPUT DATA
RUN SUBFILES      (A1003,B1010,C1014,D1008,E1015,F1018,G1002,H1101,J1005,K1006,
```

```
                L1103,M1011,M1017,P1007)
FREQUENCIES     INTEGER=SEX(1,2) AGE(1,11) RELIGION(1,6) RACE(1,4) YRSEDUCN
                (0,16) INCOME(1,5) YRSMILIT(1,5) GRADE(1,6) DSCALE(40,240)
OPTIONS         6,8
STATISTICS      ALL
FINISH
```

APPENDIX D. SPSS COMPUTE Program

SPSS COMPUTE Program

```
RUN NAME          NOVA APPLIED RES AND EVAL PRACTICUM - MODIFY AND PUNCH NEW CARDS
FILE NAME         AUTHSTDY,FACULTY-STUDENT AUTHORITARIANISM AT EPCC
VARIABLE LIST     CASEID,SEX,AGE,RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,GRADE,
                  VAR001 TO VAR050
INPUT MEDIUM      CARD
N OF CASES        232
INPUT FORMAT      FIXED (F8.0,F1.0,F2.0,2F1.0,F2.0,3F1.0,6X,50F1.0)
RECODE            AGE (16 THRU 20=1)(21 THRU 25=2)(26 THRU 30=3)(31 THRU 35=4)
                  (36 THRU 40=5)(41 THRU 45=6)(46 THRU 50=7)(51 THRU 55=8)(56 THRU
                  60=9)(61 THRU 65=10)(66 THRU HIGHEST =11)
COMPUTE           DSCALE=(VAR002+VAR003+VAR004+VAR006+VAR008+VAR009+VAR010+VAR015+
                  VAR016+VAR021+VAR024+VAR030+VAR036+VAR037+VAR040+VAR041+VAR042+
                  VAR044+VAR045+VAR049)*2
WRITE CASES       (F8.0,F1.0,F2.0,2F1.0,F2.0,3F1.0,6X,50F1.0,F5.2) CASEID,SEX,AGE,
                  RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,GRADE,VAR001 TO VAR050,
                  DSCALE
READ INPUT DATA
FINISH
```

APPENDIX E. SPSS CROSTABS Program

SPSS CROSSTABS Program

```
RUN NAME          NOVA APPLIED RES AND EVAL PRACTICUM - CROSSTABS AND CHI SQUARE
FILE NAME         AUTHSTDY,FACULTY-STUDENT AUTHORITARIANISM AT EPCC
VARIABLE LIST     FACNUMBR,CASEID,SEX,AGE,RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,
                  GRADE,VAR001 TO VAR050,DSCALE
SUBFILE LIST      FACULTY (5), A1003 (20), B1010 (16), C1014 (14), D1008 (13),
                  E1015 (19), F1018 (10), G1002 (24), H1101 (16), J1005 (12),
                  K1006 (17), L1103 (17), M1011 (16), N1017 (16), P1007 (17)
INPUT MEDIUM      CARD
INPUT FORMAT      FIXED (2.0,F6.0,F1.0,F2.0,2F1.0,F2.0,3F1.0,6X,50F1.0,F3.0)
RECODE            FACNUMBR (01 THRU 06=0)/
                  DSCALE (LOWEST THRU 134=0)(136 THRU HIGHEST=1)
IF                (FACNUMBR NE DSCALE) PERSTYLS=0
IF                (FACNUMBR EQ DSCALE) PERSTYLS=1
VALUE LABELS      SEX (1) MALE (2) FEMALE/
                  AGE (1) 16 TO 20 (2) 21 TO 25 (3) 26 TO 30 (4) 31 TO 35
                  (5) 36 TO 40 (6) 41 TO 45 (7) 46 TO 50 (8) 51 TO 55 (9) 56 TO 60
                  (10) 61 TO 65 (11) 66 & UP/
                  RELIGION (1) CATHOLIC (2) FUNDAMENTALIST (3) PROTESTANT
                  (4) JEWISH (5) OTHER (6) NONE/
                  RACE (1) ANGLO (2) BLACK (3) HISPANIC (4) OTHER /
                  INCOME (1) TO 4999 (2) 5000 TO 8999 (3) 9000 TO 13999
                  (4) 14000 TO 19999 (5) 20000 OR ABOVE/
                  YRSMILIT (1) 0-3 YRS (2) 4-9 YRS (3) 10-15 YRS(4) 16-20 YRS
                  (5) OVER 20 YEARS/
                  GRADE (1) A (2) B (3) C (4) D (5) F (6) X-W-I/
                  DSCALE (0) LOW (1) HIGH/
                  PERSTYLS (0) NO MATCH (1) MATCHED
VAR LABELS        YRSEDUCN,YEARS OF EDUCATION COMPLETED/
                  INCOME,ANNUAL FAMILY INCOME/
                  YRSMILIT,YEARS OF MILITARY SERVICE/
                  GRADE,FINAL GRADE IN COURSE/
                  DSCALE,TWENTY ITEM DOGMATISM SCALE/
                  PERSTYLS,MATCHING OF FAC-STDNT PERSONALITY STYLES
RUN SUBFILES      ALL
```

```
CROSSTABS       TABLES=SEX,AGE,RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,GRADE BY
                DSCALE/ GRADE BY PERSTYLS
STATISTICS      1
READ INPUT DATA
RUN SUBFILES    (FACULTY)(A1003,B1010,C1014,D1008,E1015,F1018,G1002,H1101,J1005,
                K1006,L1103,M1011,N1017,P1007)
CROSSTABS       TABLES=SEX,AGE,RELIGION,RACE,YRSEDUCN,INCOME,YRSMILIT,GRADE BY
                'SCALE/ GRADE BY PERSTYLS
STATISTICS      1
FINISH
```


UNIVERSITY OF CALIF.
LOS ANGELES

OCT 15 1976

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